

# Invited lecture

**Title:** Bio-inspired architected nanomaterials for energy conversion

**Speaker:** Prof. Xiaodong Chen

Nanyang Technological University

**Date & Time :** 16:00-17:00(pm) September 4, 2012 (Tuesday)

**Venue :** Meeting room 308, IPE Mansion



## Abstract:

Bio-inspired nanomaterials, inspired by the diverse and sophisticated materials and hierarchical material systems found in nature, are becoming of increasing interest. Currently, it more focuses on developing a fundamental understanding of the synthesis and hierarchical organization of natural occurring materials, and uses this understanding to engineer new eco-friendly "bio-inspired" materials for diverse applications. This talk will describe our recent efforts on developing bio-inspired architecture nanomaterials for energy conversion. First, I will show several examples on how we developed universal approaches for creating bio-inspired hierarchical structures for energy storage. When the bio-inspired hierarchical structures were used as electrode materials, they behaved enhanced energy storage performance. Then, I will discuss how the bio-inspired materials can be developed and used for light harvesting with enhanced photo-activity. Finally, the examples on the bio-inspired hierarchical artificial photosynthetic systems for solar hydrogen evolution will be presented.

## Introduction:

Dr. Xiaodong Chen is a Singapore National Research Foundation (NRF) Fellow and Nanyang Assistant Professor at the School of Materials Science and Engineering, Nanyang Technological University (Singapore). He received his B.S. degree (Honors) in Chemistry from Fuzhou University (China) in 1999, M.S. degree (Honors) in Physical Chemistry from the Chinese Academy of Sciences in 2002, and Ph.D. degree (Summa Cum Laude) in Biochemistry from University of Muenster (Germany) in 2006. After his postdoctoral fellow working at Northwestern University (USA), he started his independent research career at Nanyang Technological University since 2009. His research interests include integrated nano-bio interface and bio-inspired materials for energy conversion. So far, He has published over 70 scientific articles, including in Nature Nanotech, Nature Chemistry, JACS, Angew Chem, and Adv Mater, and has given more than 50 invited talks/seminars. Due to his outstanding performance and innovative research work, he has been awarded more than ten prestigious awards and fellowships, including the precious Singapore National Research Foundation Fellowship, the Tan Chin Tuan Exchange Fellowship, and the best PhD Dissertation award at the University of Muenster.

**This is invited by Prof. Dan Wang, Welcome !**

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